INFORMATION REPORT INFORMATION REPORT

CENTRAL INTELLIGENCE AGENCY

S-E-C-R-E-T

25X1

COUNTRY	Bulgaria	REPORT	25X1
SUBJECT	The Bulgarian High Tension Line Network	DATE DISTR.	28 March 1955 25X1
		NO. OF PAGES	20
DATE OF INFO.		REQUIREMENT NO.	RD
PLACE ACQUIRED		REFERENCES	
DATE ACQUIRED		This is UNEVALUATED Information	

SOURCE EVALUATIONS ARE DEFINITIVE. APPRAISAL OF CONTENT IS TENTATIVE.

Introduction

25X1

1. The production and transportation of electrical power was certainly an excellent idea on the part of the present Bulgarian regime, and it must be recognized that considerable progress has been realized in this sphere. In 1939 the total power output did not surpass 130,000 kilowatts and the annual production of electrical energy was approximately 240,000,000 kilowatt hours. this last figure was allegedly multiplied by 5.8 which would give a total production of approximately 1,400,000,000 kilowatt hours. The total power output allegedly has already increased to 240,000 kilowatts in 1948 and in 1948 an article in the press dated August 1954 stated that the new power stations about to be completed would have a total power output of 430,000 kilowatt hours. 25X1

2. The number of power stations in Bulgaria has increased from 46 (19 hydroelectric, 8 thermoelectric, and 19 diesel-electric) in 1939 to approximately 100 completed, under construction, or in project (60 hydroelectric, 17 thermoelectric, and 22 diesel-electric). Work has been particularly concentrated on hydroelectric power stations, which is normal for a country poor in coal and petroleum, even though the rivers carry little water for a good portion of the year.

3. The output of these power stations has been increased; since prior to 1939 only Kurilo and Dimitrovo exceeded 9,000 kilowatts, while now, outputs of from 50,000 to 100,000 kilowatts are being attained or are in project.

4. The high tension network of 1940 was essentially regional in character. Each power station or group of power stations supplied a determined sector. After 1940, efforts were made toward interconnecting lines and creating higher tensions. These would supposedly not surpass 110 kilowatts because of the size of Bulgaria.

5. This network probably does not exceed 1,700 kilometers; that is, 16 kilometers per 1,000 square kilometers 25X1

S-E-C-R-E-T

25X1

STATE	X	ARMY	X	NAVY	X	AIR	X	FDI		AEC		ORR Ev	X

(Note: Washington distribution indicated by "X"; Field distribution by "#".)

INFORMATION REPORT INFORMATION REPORT

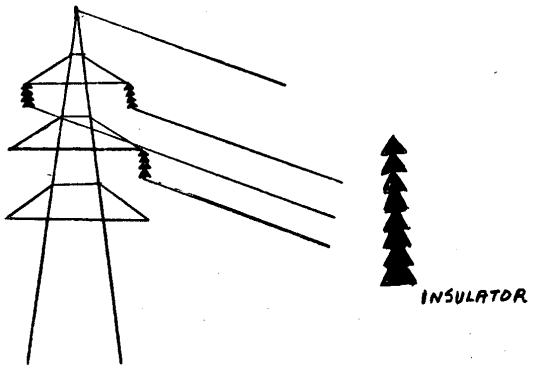
25X1

It should not be denied, however, that a framework has been created with respect to the production and transportation of electrical energy, and the Bulgarian regime emphasizes that Bulgaria has taken the first place in the Balkans with regard to the production of electricity.

Line No. 1.: The Kurilo-Novi Khan-Vakarel-Ikhtiman-Krichim Line

6. This high tension line starts at Kurilo (N 42-50, E 23-22) and crosses the Sofia-Kazanlŭk road at a point 12.5 kilometers east of Sofia. It runs in the Sofia plain in a southeast-east direction and then turns and parallels the Sofia-Plovdiv road at an average distance of one kilometer from it. It cuts across this road at a point three kilometers east of Novi Khan (N 42-36, E 23-36) and disappears into the mountains to reappear to the west of Vakarel. (N 42-03, E 23-43). It crosses the road at a point three kilometers south of Vakarel and continues on the north side of it in the plain as far as Ikhtiman and at that point it is crossed by the road to Pazardzhik. The line then turns in a southerly direction and disappears in the wooded hills. It reappears to the north of Gara Kostenets (N 42-18, E 23-52) and, after another change in direction, cuts across the road to Plovdiv, to the north of a bend in the road. It then remains on the north side of the road at a distance of from two to five meters from it. West of Momina Klisura (N 42-14, E 23-59) the line passes to the south. Then after another change in direction, it crosses to the north side at Malko-Bel'ovo (N 42-13, E 24-01) and remains in the vicinity of the road up to a point just east of Lozen (N 42-11, E 24-11), near Pazardzhik. It then makes an abrupt turn toward south-southeast and disappears in the direction of the mountains.

7. This is a single-circuit line with one ground cable on metal pylons 6-7 meters high and with insulators 40-50 centimeters long consisting of 7 or 8 discs.



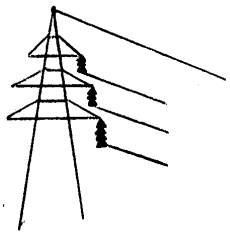
This line was not completed in 1949; it was scheduled to have a 110 kilovolt carrying capacity and was to pass through a power station at Sestrimo. (N 42-13, E 23-55). Apparently at the other end of Kurilo the line runs toward the Krichim hydroelectric station.

Line No. 2.: The Kurilo-Mezdra line

8. This high tension line runs from Kurilo along a crest, generally remaining rather far from the road which it crosses two or three times in the last third of its route. It terminates to the north of the Iskŭr River, north of the Mezdra transformer station. This is a single circuit line with one ground cable on standard metal pylons and insulators which are approximately 50 centimeters long and consist of seven discs. In 1949 this line

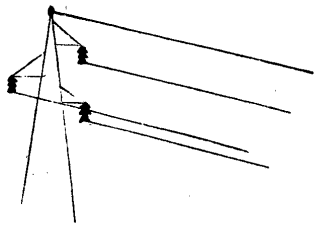
25X1

was planned to have a carrying capacity of 110 kilovolts.



Line No. 3: Mezdra-Telish-Pleven-Levski Line

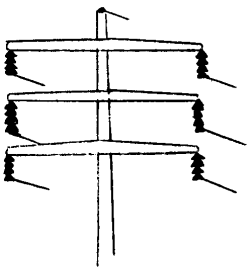
9. On the road from Sofia to Pleven and Levski (N 43-22, E 25-08) a high tension line may be observed coming from a southwesterly direction and cutting across the road at the second grade crossing prior to reaching Telish (N 43-19, E 24-16). This high tension line then passes to the south of the road and forms a cord to the Telish-Pleven road. It reaches Pleven from the west and a transformer station located at the western limit of the railroad station of Pleven. It then crosses the railroad tracks, climbs into the hills north of Pleven, and then heads in a southeasterly direction. The line cuts across the Pleven-Levski road at a point approximately 20 kilometers east of Pleven and then again crosses to the south in the direction of Levski. This is a one circuit, one ground cable line on metal pylons with 7-disc insulators.

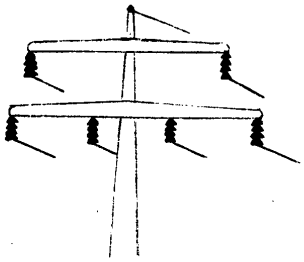


In 1949 this line was listed as being planned as a 110 kilovolt line.

Line No. 4: The Pastra-Rila-Dimitrovo Line

10. This high tension line runs from the power station of Pastra (N 42-07, E 23-13) on the Rila River and passes through the Rila power station which includes a forced conduit approximately 200 meters high. This is a 2-circuit, one ground cable high tension line with 4-disc insulators.





It continues to the mountains and reappears at a point several kilometers south of the road to Stanke Dimitrov. It passes to the north side at the southern exit of Stanke Dimitrov and continues in the hills to the west of the city. It cuts across the road to Sofia at a point three kilometers north of Stanke Dimitrov and continues in a south-north direction to a point approximately three kilometers south of Tsurkva (N 42-36, E 23-07).

25X1

25X1

It terminates here in a large building which is probably a transformer station. It leaves this power station running to the northwest, probably to Dimitrovo. In 1939 this line was known as a 60,000 volt line.

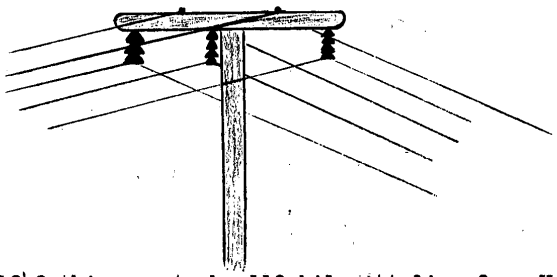
Line No. 5: The Sofia Dimitrovo Line

11. This high tension line starts at the transformer station at the exit of Sofia on the road to Dragoman (N 42-56, E 22-57). This line branches into two lines, one running to the northeast and the other to the southwest. A similar line was observed decending from the hills which dominate the Knyazhevo (N 42-40, E 23-15) - Dimitrovo road. This line passes at a point 1.5 kilometers south of Tsurkva and continues in the direction of Dimitrovo. It is a 2-circuit, one ground cable line on metal pylons with 4-disc insulators.

Among the plans of 1949 was one concerning a 60 kilovolt line which was to connect Kurilo to the power station at Dimitrovo. This appears to be Line No. 5. It has the characteristics of the Rila-Dimitrovo line which is a 60 kilovolt line.

Line No. 6: The Sofia(Kurilo)-Dimitrovo Line

12. This high tension line starts at Kurilo and cuts the road to Dragoman at a point four kilometers from Sofia. This line then passes to the south of the village of Filipovtsi (N 42-49, E 22-45) and continues in a southeasterly direction. This is a 1-circuit, two ground cable line on concrete pylons. It has 7-disc insulators.



In the plans of 1949 this was to be 110 kilowatt line from Kurilo to one of the power stations of Dimitrovo. Line No. 6 appears to be this line.

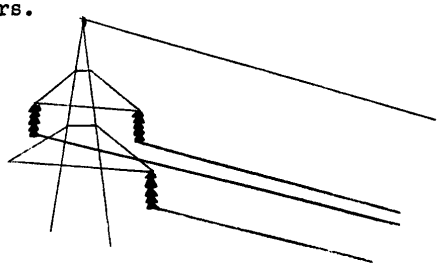
Line No. 7: The Mezdra-Vratsa Line

13. Two high tension lines originate at the Mezdra power station. One of them appears to be a continuation of the line from Kurilo and probably runs in the direction of Pleven, in accordance with the project of 1949. The other one runs to the north of the road to Vratsa and, without going through the city, continues in a southeast-northwest direction until it cuts the Vratsa-Mikhaylovgrad road at a point 15 kilometers from Vratsa. It then continues on the south side of the road to a point 25 kilometers beyond where it crosses once more to the north and disappears in a northerly direction. This is a 1-circuit, one ground cable line on metal

25X1

25X1

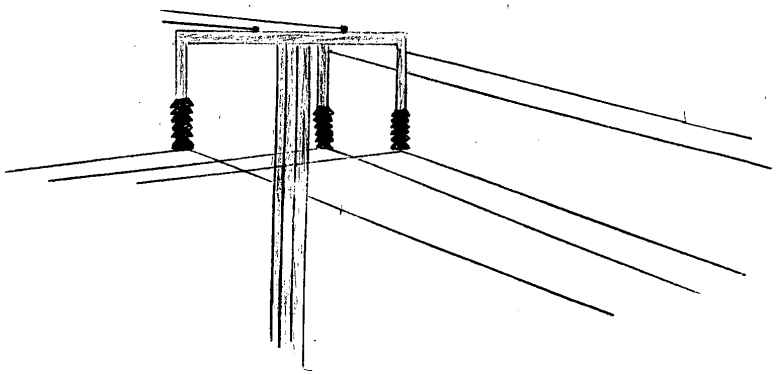
pylons with 7-disc insulators.



In the plans of 1949 this was to be a 110,000 volt line from Mezdra to Brusartsi (N 43-40, E 23-04). On 14 April 1953 the Bulgarian press reported that this line had been completed.

Line No. 8: The Petrokhan-Mikhaylovgrad Line

14. Coming from Vratsa, at a point three kilometers before Mikhaylovgrad, on the hill which dominates the Bruziya River this high tension line cuts the road in a southwest-northeast direction. It does not run through Mikhaylovgrad. It comes from the complex of power stations known as Petrokhan (probably Petrokhan Proknod; N 43-07, E 23-07) and continues in a north-northeast direction. This is a 1-circuit, two ground cable high tension line on concrete pylons with 7-8 disc insulators.



In the plans of 1949 this line was to continue to Mikhaylovgrad and have a power of 110 kilowatts.

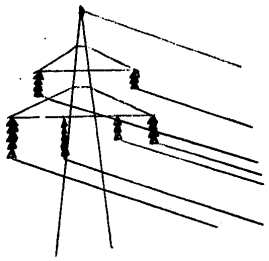
Line No. 9: The Yambol-Stara Zagora-Kazanlŭk Line

15. At the northern exit of Yambol there is a large transformer station. From here a 2-circuit line with one ground cable begins which follows the road to Sliven for a certain distance and then disappears. However, beyond Nova Zagora, a line reappears at the south of the Stara Zagora road and cuts across it at the east entrance to Stara Zagora where there is a transformer station. It continues then on to Kazanlŭk, remaining on the east side of the road to a point 20 kilometers from Kazanlŭk. It then crosses to the west side to continue in a straight line as far as the eastern entrance to Kazanlŭk where it terminates in another transformer station. This is a 2-circuit parallel line with one ground cable on metal pylons. Up to Stara Zagora one circuit is on 8-disc insulators; the other on 4-disc insulators. Between Stara Zagora and Kazanlŭk the two circuits are on 4-disc insulators, but the three discs of one circuit are painted white and the other three black. In 1940 this line was known as a 60 kilovolt line. (See sketch on next page.)

25X1

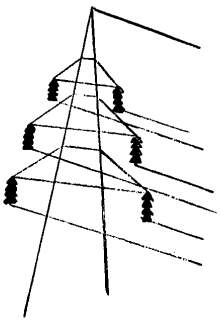
25X1

Sketch of Line No. 9:



Line No. 10: The Kazanlŭk-Shipka-Gabrovo Line

16. This high tension line runs in the plane in a southeast-northwest direction at first to the east of the road to Shipka (N 42-43, E 25-20) and then west of it. Beyond Shipka, the line turns and then climbs a steep hill cutting the road about eight times up to the top of the hill. It descends into Gabrovo in a south-north direction crossing the road 3-4 times and continuing on to the hills immediately east of Gabrovo (N 42-38, E 25-10). It terminates at a transformer station at the north exit of Gabrovo on the east side of the road, abeam of the bridge crossing the river. This transformer station includes transformers in the open, next to a small building. In front of this installation, on the side of the road, there is another small new building, probably for administrative use.



This high tension line is a 2-circuit, one ground cable line on metal pylons, with 7-8 disc elements. This is known to be a 60 kilovolt line.

Line No. 11: The Gabrovo-Tŭrnovo Line

17. Two 1-circuit lines depart from the transformer station of Gabrovo, one continuing to Tŭrnovo while the other disappears in a northwesterly direction. The line to Tŭrnovo continues along the east part of the road for a short distance and then disappears at a point five kilometers north of Gabrovo. It reappears once again at the northwest exit of Tŭrnovo descending from the high slopes, and crosses the road to Ruse, the Yantra river and the railroad. It then continues in a southwest-northeast direction terminating most probably at Gorna Oryakhovitsa. This is a 1 circuit, single ground cable line on metal pylons, and has 7-8 disc insulators. In 1949 this was known as a 60,000 volt line.

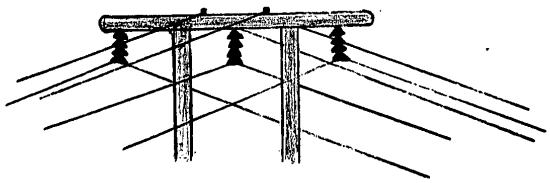
Line No. 12: The Stalin-Karnobat-Dimitrovgrad-Kŭrdzhali Line

18. At a point 20 kilometers north of Aytos a high tension line from the east crosses the Provadiya-Aytos road and continues in a southwesterly direction. This line reappears along the road from Aytos to Karnobat. To the north of the road this line approaches Karnobat where it joins with another line of similar characteristics which probably comes from

25X1

25X1

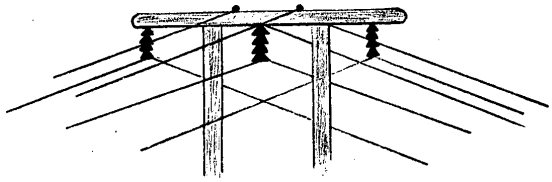
Burgas. It then crosses the Karnobat-Sliven road at the exit of Karnobat and continues in a southwest direction. A line with the same characteristics reappears to the north of Dimitrovgrad where, after having crossed the Maritsa River, it terminates at the "Vulko Chervenkov" Factory. It then continues in a southerly direction, crossing hills, and cuts the Plovdiv-Khaskovo road at a point 17 kilometers from Plovdiv. This is a 1-circuit, two ground cable line on concrete or metal pylons and has 7-disc insulators.



This line probably comes from Stalin. The plans of 1949 called for such a line to start at Burgas with a carrying capacity of 110 kilovolts continuing to the north as far as Provadiya and Stalin. The project of 1949 also called for the extension of this line from Provadiya to Razgrad via Kolarovgrad at 110 kilovolts. Nothing was observed which would lead one to believe that this project was completed. The plan of 1949 also indicated that this 110 kilovolt line continued to Kŭrdzhali. According to latest observations this project was completed, since this line was observed to the north of Dimitrovgrad and was followed as far as the "Vulko Chervenkov" power station, then continuing in a southerly direction.

Line No. 13: The Burgas-Karnobat Line

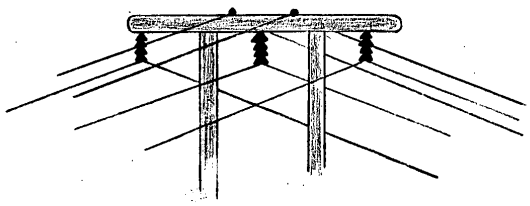
19. Beyond Aytos a high tension line appears to the south of the road to Karnobat and gradually approaches it until it crosses it at the eastern entrance to Karnobat. This line terminates to the north of Karnobat where it connects with the lines discussed in the paragraph above. This is a 1-circuit, two ground cable line on concrete or metal pylons with 7-disc insulators.



Although it was not actually observed, this line must come from Burgas actually since no high tension line crosses the Burgas-Aytos road.

Line No. 14: The Tŭrnovo-Gorna Oryakhovitsa-Popovo-Razgrad Line

20. To the west of Tŭrnovo, beyond the fork in the Tŭrnovo-Ruse and Tŭrnovo-Pleven roads, a high tension line was observed coming from the west and heading east. This line then cuts the road to Ruse at a point 10 kilometers north of Tŭrnovo. It reappears further on at a point one kilometer north of Razgrad and then continues to the northeast. This is a 1-circuit two ground cable line on concrete pylons of H-frame construction.



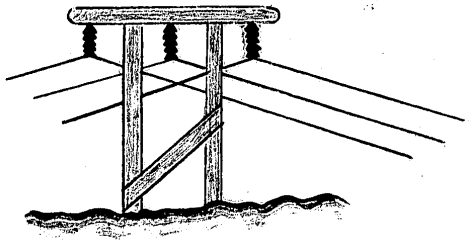
25X1

25X1

An article in the Bulgarian Press on 20 October 1954 reported that this line started at Gorna Oryakhovitsa and terminated at Razgrad, passing through Popovo. Actually this line arrives at a point to the west of Turnovo undoubtedly coming from a power station in the vicinity of the city. In the plans of 1949 this line was to have a carrying capacity of 110 kilovolts, and was to be extended as far as Dulovo with a carrying capacity of 60 kilovolts. The article in the Bulgarian press just cited makes no mention of this extension.

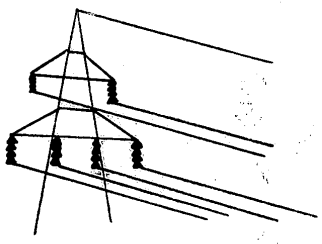
Line No. 16: The Byala-Ruse Line

21. Beyond Byala, coming from Turnovo, there is a high tension line running on the west side of the road. At a point 10 kilometers south of Ruse, the line cuts across the road and continues in a northwest direction. It reappears later at the exit of Ruse where it cuts the road to Razgrad and continues in a north-northeast direction. This is a 1-circuit line, without a ground cable, on wooden pylons of H-frame construction. The insulators are either thin, with 8 discs, or larger with 4 discs. This line apparently does not cross the city of Ruse. It probably passes to the east of Ruse and the new bridge, heading perhaps toward Tutrakhan.



Line No. 17: The Plovdiv-Dimitrovgrad Line

22. Starting from the power station and transformer station of Plovdiv, [illegible] located to the south of the city, there is a high tension line which cuts the road to Asenovgrad at a point seven kilometers southeast of Plovdiv. This line crosses the Plovdiv-Khaskovo road at a point 45 kilometers east of Plovdiv. It reappears again at Dimitrovo where it terminates at Power Station No. 2. This is a 2-circuit, one ground cable line on metal pylons having 4-5 disc insulators. This is probably the line known in 1940 as a 60 kilovolt line.



25X1

25X1

Transformer and Power Stations

Location	Type	Coordinates	Remarks
Plovdiv	Transformer and Power station		At the south exit of Plovdiv towards Asenovgrad, near the railroad junction. Buildings and transformers are located in the open in a large area.
Mezdra	Transformer and Power station	N 43-08-30 E 23-42-00	Large buildings with transformers in the open, at the west exit of Mezdra, approximately 500 meters to the east of a grade crossing.
Pleven	Transformer Station	N 43-25-45 E 24-36-00	To the extreme west of the west Pleven railroad station. Transformers are in the open.
Gabrovo	Transformer and Power Station	N 42-52-30 E 25-19-00	At the north exit of Gabrovo, a beam of the bridge which crosses the Yantra River and on the east side of the road. Transformers of medium size in the open.
Kazanlŭk	Transformer and Power Station	N 42-37-00 E 25-24-30	At the east entrance of Kazanlŭk on the north side of the road coming from Stara Zagora.
Ruse	Thermoelectric transformer and Power Station	N 43-52-20 E 25-59-00	At the northeast exit of Ruse after the railroad crosses the Tutrakan road.
Stara Zagora	Transformer Station	N 42-25-30 E 25-38-30	At the east entrance of Stara Zagora, on the south side of the road coming from Nova Zagora.
Yambol	Transformer and Power Station	N 42-29-10 E 26-25-00	At the northwest exit of Yambol, on the east side of the road leading to Sliven. Fairly large buildings and transformers are in the open.
Sofia	Transformer Station	N 42-42-40 E 23-17-20	At the northwest exit of Sofia on the east side of the road leading to Dragoman, and 700 meters from a grade crossing. A large building entirely enclosed where three power lines terminate. An old transformer is located in the vicinity.

Location	Type[1]	Coordinates	Remarks
Tsurkva	Transformer Station		Approximately three kilometers south of the Sofia-Dimitrovo and Sofia-Stanke Dimitrov road junctions there are enclosed buildings.
Razlog	Power Station	See map	A small power station is located at the west entrance of Razlog, on the south side of the road coming from Simitli. There is a regional power station from which only secondary lines begin.
Cherven Breg	Transformer and Power Station	See map	Large buildings with transformers in the open, on the west side of the road. Orekhovo is about one kilometer north of Cherven Breg. Buildings isolated from the rest of the city are located on a ridge. Line # 3 passes by this post where the secondary lines also leave.

25X1

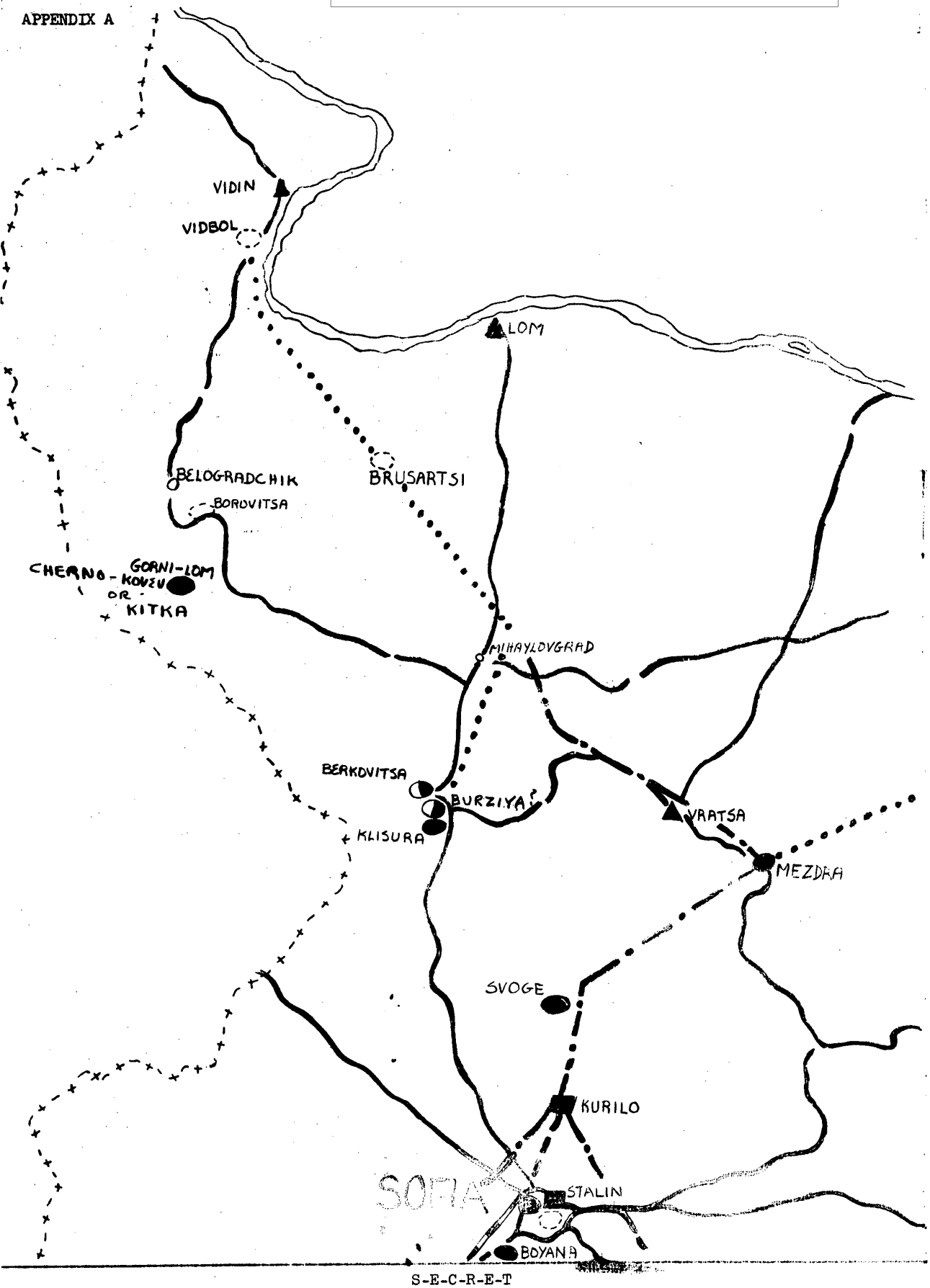
UNCODED

25X1

S-E-C-R-E-T

25X1

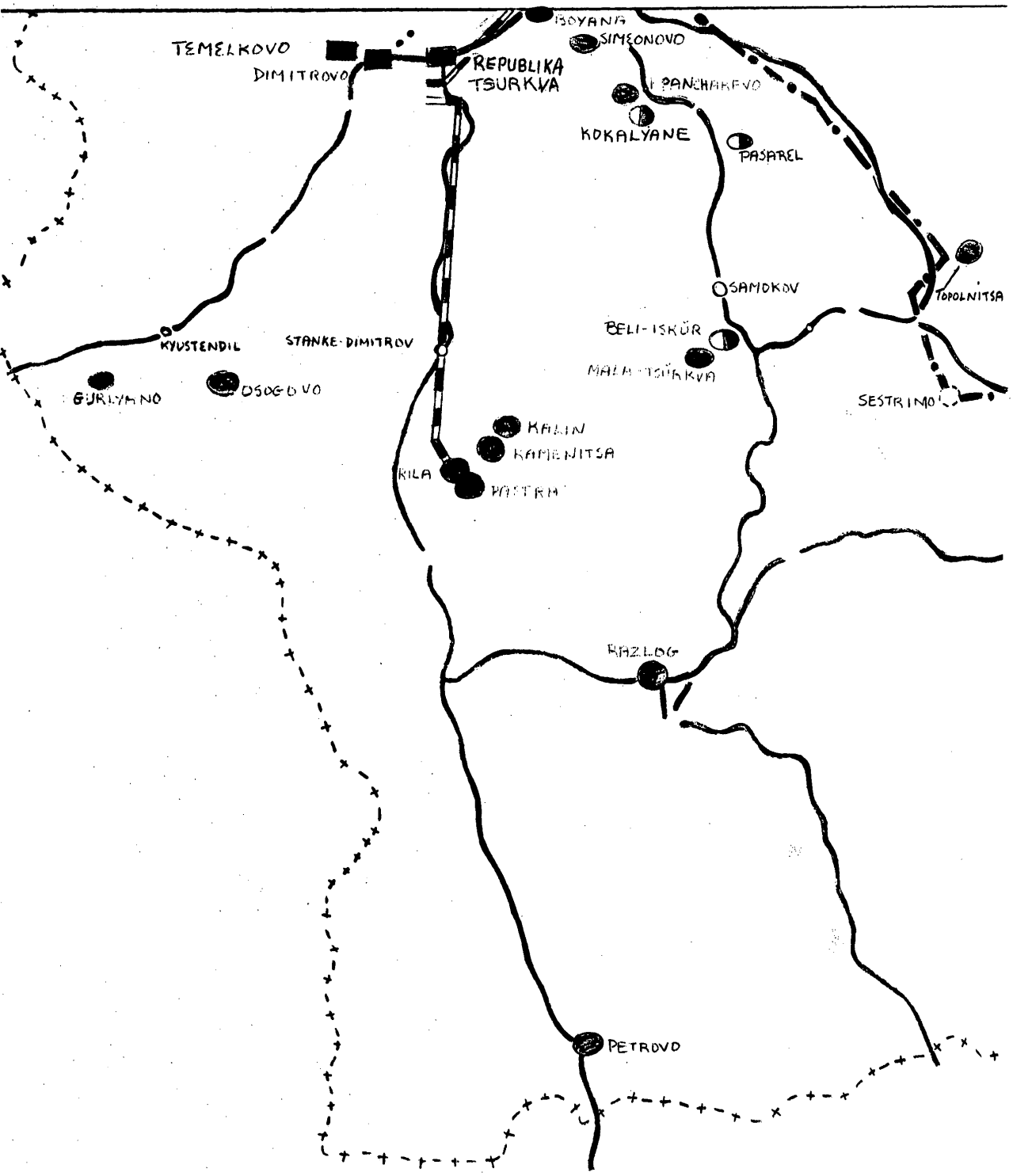
APPENDIX A



25X1

25X1

APPENDIX B

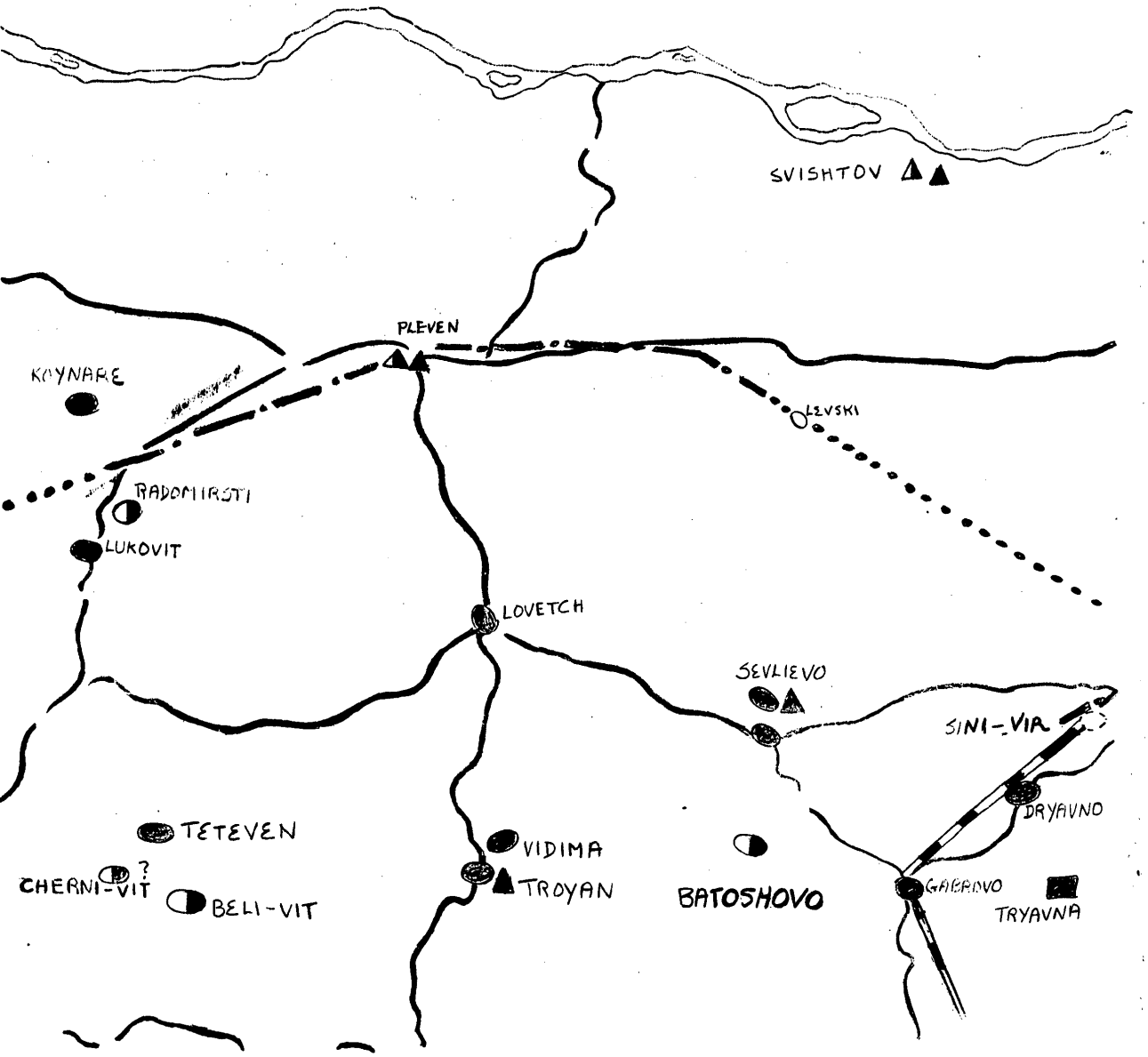


25X1

25X1

APPENDIX C

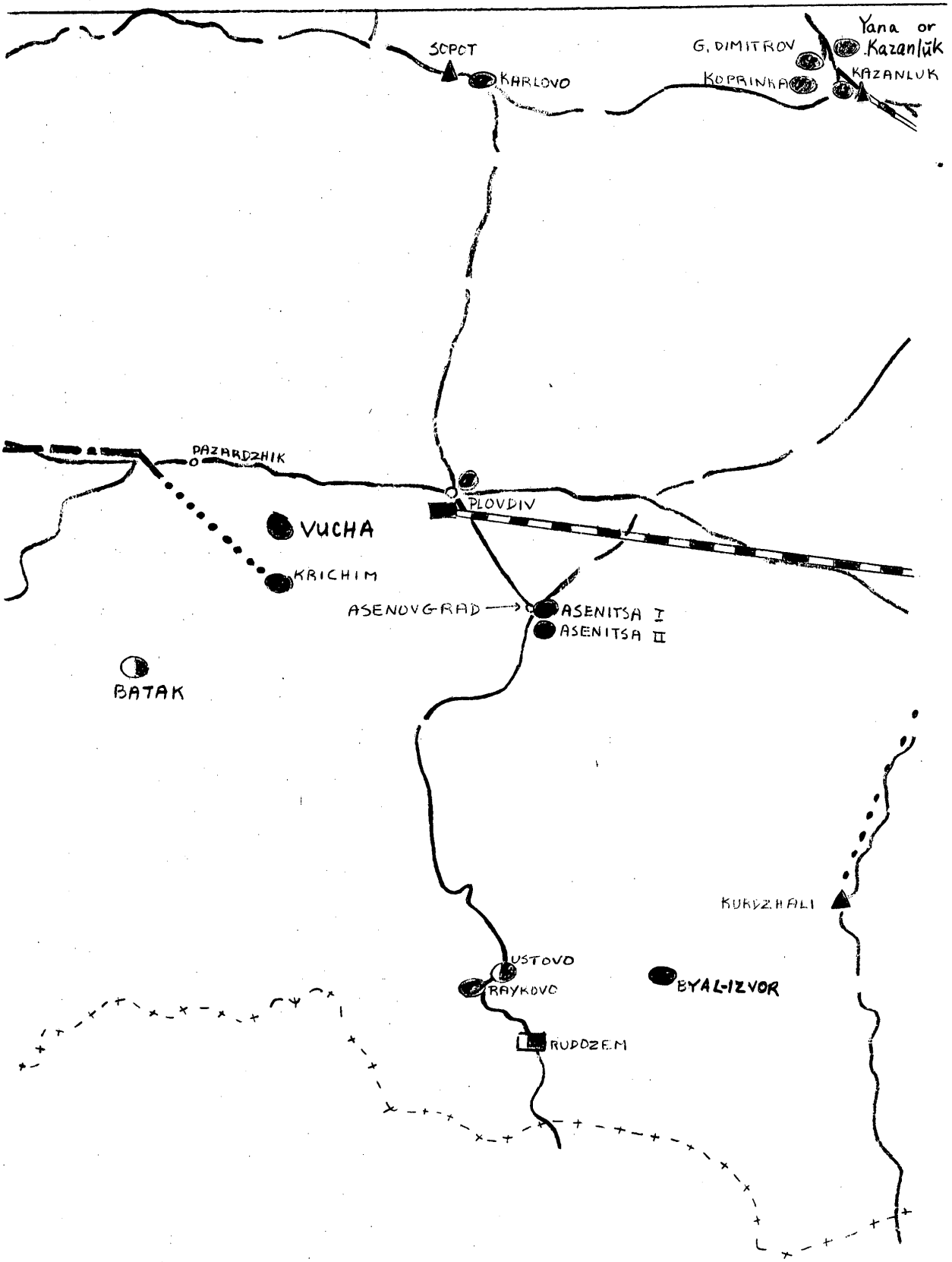
BULGARIA



25X1

25X1

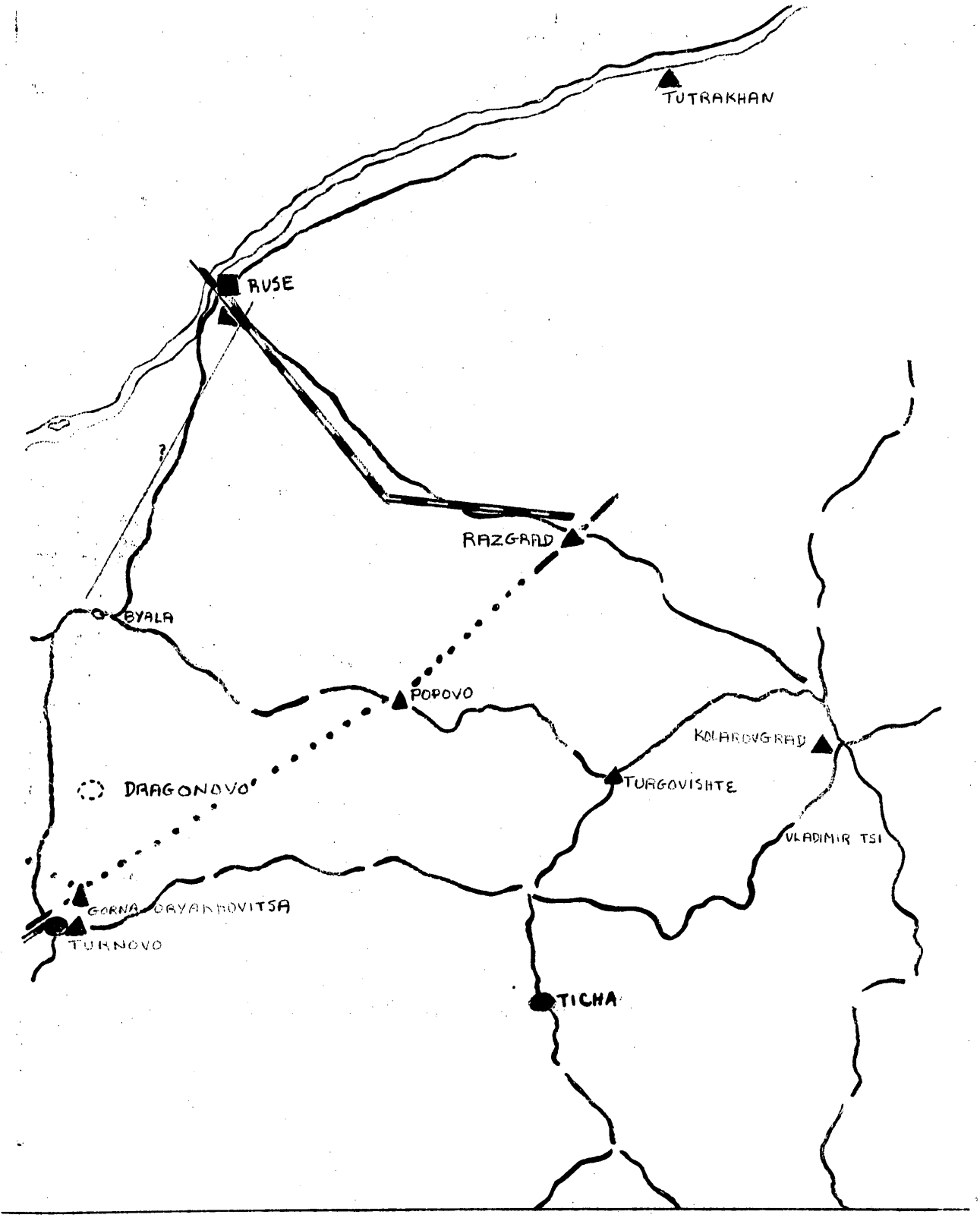
APPENDIX D



25X1

25X1

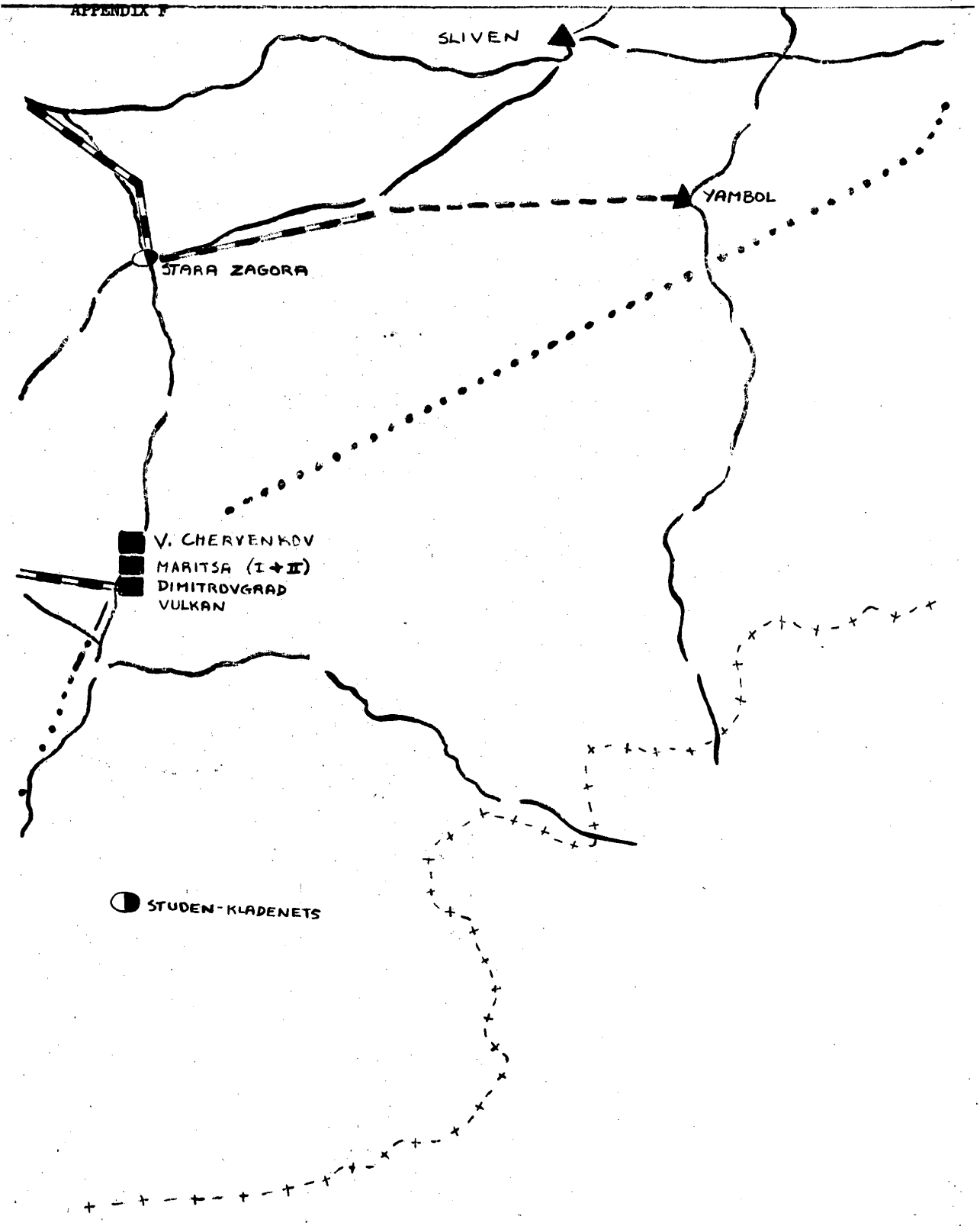
APPENDIX E



25X1

25X1

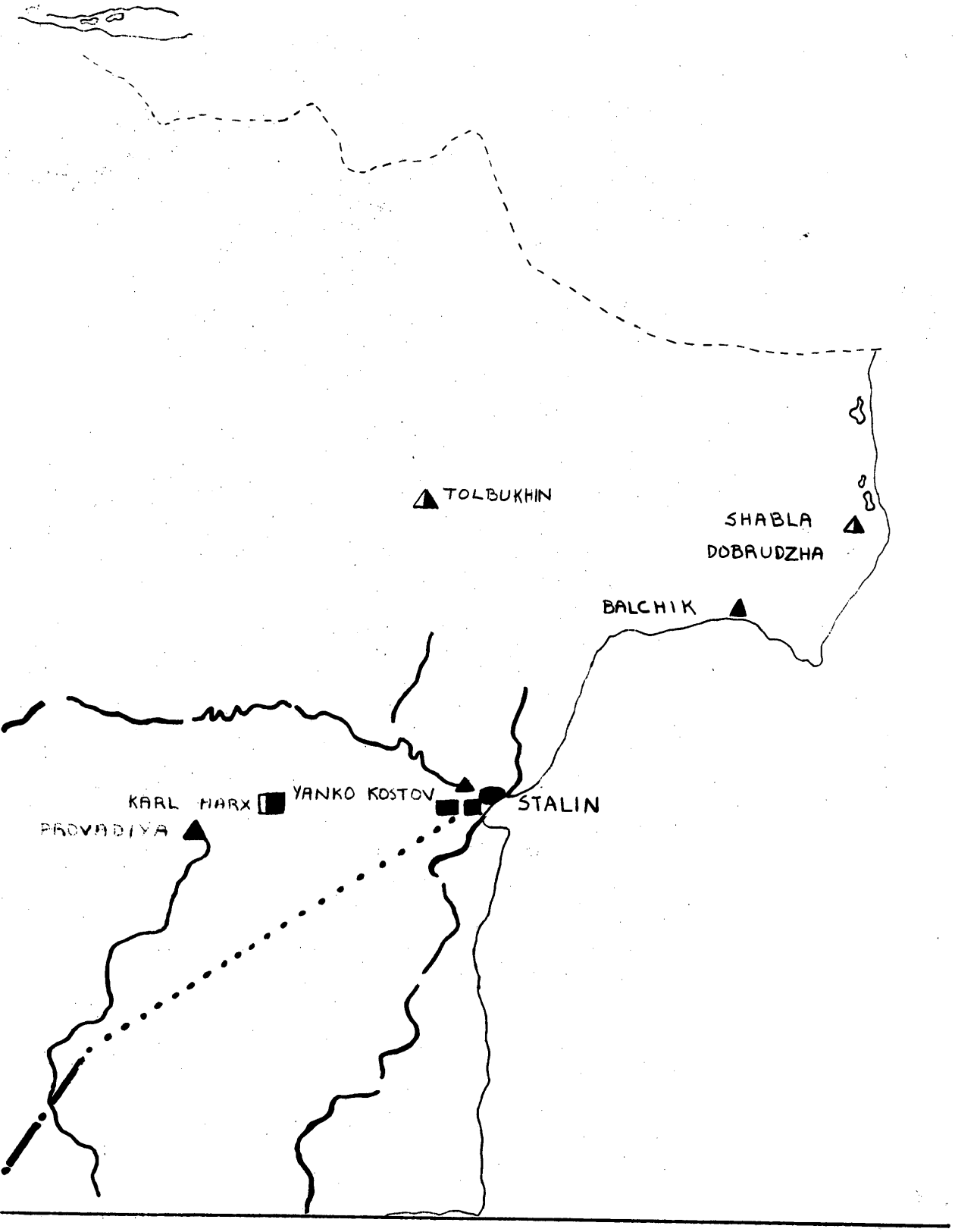
APPENDIX F



25X1

25X1

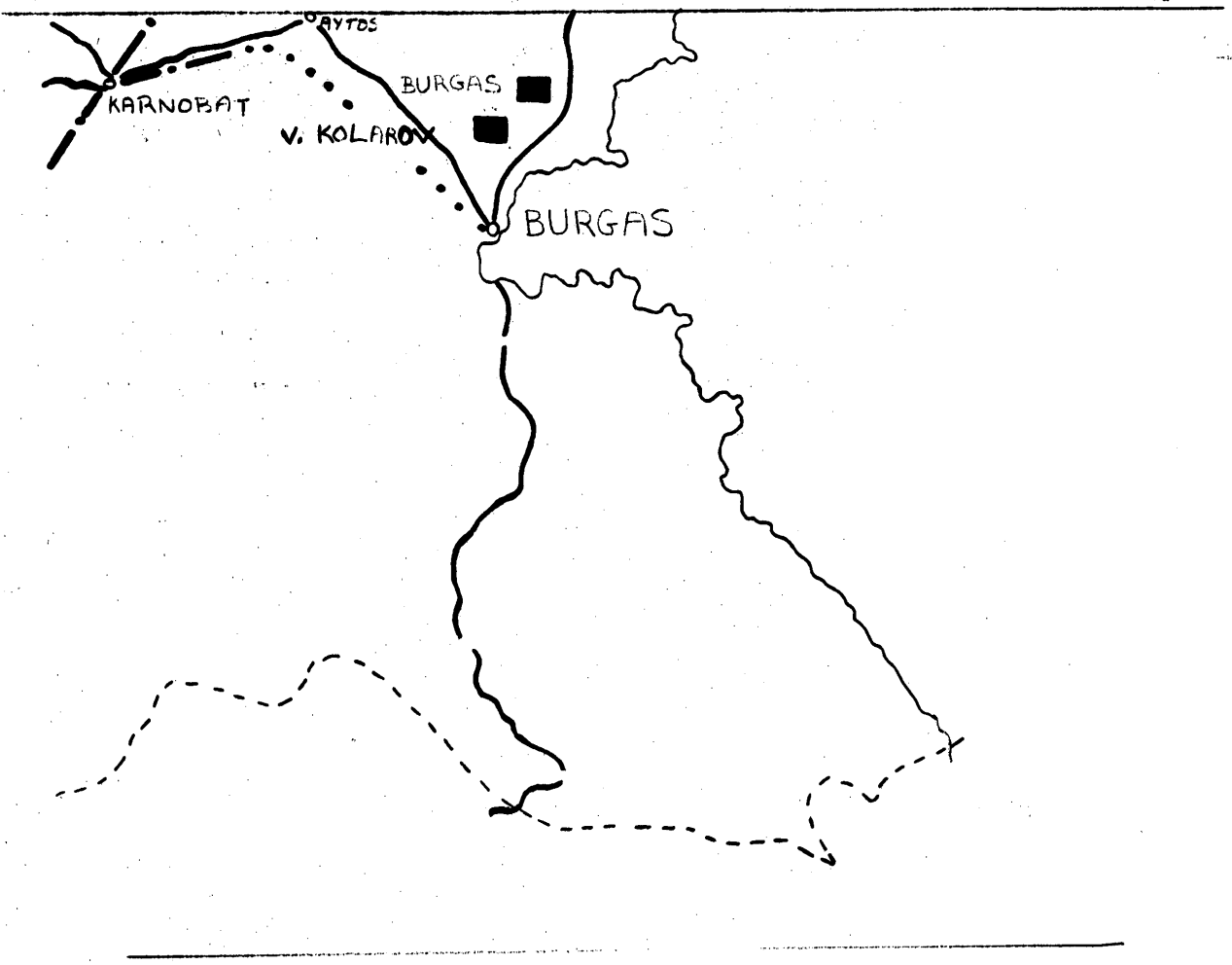
APPENDIX G



25X1

25X1

APPENDIX H



25X1

25X1

Hydroelectric	Under construction	In Project
Thermoelectric	"	"
Diesel electric	"	"

100 kv. line
60 kv. line

Portions of high tension lines identified visually or believed to be located as indicated.

110 kv. line
60 kv. line

Portions not observed but assumed to be hidden

Assemble map as indicated below:

APPENDIX A	C	E	G
B	D	F	H

25X1